

HD
10/21/06

Please replace the paragraph beginning at page 6, line 3 with the following redlined paragraph:

The "3 dimensional input device" cannot render controlled vector forces because of the following reasons, (i) it is impossible to display exact directional force, because the device can only grasp or release apply drag, or resistance to movement to each string by ON/OFF magnetic switches and cannot impose an exact tension in each string; (ii) there is no accounting for the changing force applied by the weights attached to each string which provide a variable tension as the velocity of the moving weight changes the tension; (iii) there is no accounting for extraneous forces resulting from friction between the frame, pulleys, ON/OFF magnetic switches and the strings; and (iv) there is no initialization sequence described which is required for determining initial string lengths as need for determining string orientations and finger position so that forces can be reflected accurately. In summary this is not a true force feedback device, but instead is only a tracking mechanism with a single force effect (direction nonspecific drag). As an input device, the system also lacks a robust measurement method for determining the length of the strings, which results in substantial fingertip position measurement errors. There is also no means for measuring orientation of the finger (roll, pitch and yaw).

Please add the following two paragraphs before the paragraph beginning at page 20, line 6:

As used in the claims, the term *active tension* refers to a force applied in a longitudinal direction to a cable that, if it were not resisted, would result in lengthwise movement of the cable. For example, the driving motor 124 of each of the tool translation effectors 120 applies active tension to the cable, in that the motor applies a force in the form of torque to the associated spool to retract the associated cable, thereby transferring the force longitudinally along the cable. If the force is resisted, tension on the cable will be exerted, proportionate to the force applied by the motor; if the force is not fully resisted, the cable will rewind, i.e., the active tension will result in movement of the cable. If active tension applied to each of the cables of a